Pictured above is a "before" shot of the Denslow silo leaning a precarious 69 in.

WHAT DOES STRAIGHTENING COST? WHO PAYS THE BILL?

Setting Crooked Silos Straight

By Frank Buckingham

When Elam Zimmerman's new silo near Ephrata, Penn., started leaning after it was filled in 1979, the silo builder was called back to find the trouble. Digging around the base, he discovered a filled-in lime kiln five feet below the surface, about a foot deeper than the original excavation for the silo footings.

The 18 x 70, 80-ton silo contained about 800 tons of silage. So, immediate straightening was out of the question. Instead, the builder — Madison Silos of Ephrata — poured two nine foot deep concrete pillars under the leaning side to prevent more tipping. When the silo was emptied, Agricultural Engineer Bernard Stanek came from Madison Silo's Wisconsin headquarters to supervise the straightening operation.

Every seventh stave around most of the silo base was removed and 20 ton jacks, shored up with oak planking and heavy metal plates, were installed in each hole. Then, each jack was raised a few strokes at a time until the structure was returned to vertical. The leaning side was raised more than six inches. The removed staves were replaced and a new foundation collar poured under the lifted wall.

Stanek and his crew "saved the day" by straightening a leaning silo for new New York dairyman Ralph Denslow, of Boonville. "I just can't say enough about the job Stanek and his crew did for us. They saved a leaning silo that I was sure we were going to lose," says Ralph.

The 24 by 65 ft. stave silo, built by another company, started leaning shortly after it was filled in the fall of 1978. "I called the company that built it and got no help whatsoever from them," says Ralph. "We spent the next 3 days unloading about 1/3 of the silage and this seemed to temporarily stop it from tilting any further. Over the next 18 months, we were able to empty it completely. The empty silo began to lean still more and we figured the only solution was to let it go, or have it taken down and rebuilt."

It was at this point that Stanek was called to the scene. When he arrived, the silo was tilting 69 in. Another 3 in. and it would topple. Afraid it might go, Denslow quickly removed the $5,000 unloader inside so it wouldn't get busted up.

Stanek and his crew removed a ring of defective staves from around the base of the silo, then gradually lowered the 100 ton-structure 30 in., using ten 20-ton jacks.

Although 30 in. lower, the silo now stands perfectly straight and was filled with silage last fall. Total cost to Denslow for having it straightened was right at $8,000, not counting the labor involved to take the unloader out and put it back in, repairing the outside chute, and the many hours of time Denslow himself spent getting the problem resolved.

Stanek says a farmer who discovers he has a leaning silo should immediately contact the silo builder, or the nearest silo company, and ask for help. He notes that most tilting results either from an inadequate foundation, or deterioration of the lower portion of an old silo wall from age and neglect. In any case, if a leaning silo is not repaired and straightened, it's almost certain to eventually collapse.

What does silo straightening generally cost, and who's responsible for paying the bill?

Stanek says the cost usually runs $3,000 and up, depending on the repairs needed and how far the silo leans. "The foundation for the leaning silo of Ephrata was poured by the owner, and he paid for the silo straightening. However, on new silos, if the builder does all the work, he's usually considered responsible. However, silo age and how well it's been maintained are also considered. For instance, good drainage around the silo must be maintained to prevent accumulations of deteriorating liquids and trash. Any old silo of concrete or steel that's not well maintained and drained will become potentially unstable and unsafe to use or work around."

Stanek notes that most so-called "silo explosions" are caused by the breaking of a single lug or band. "This suddenly overloads bands above and below the broken band, and because they are undoubtedly weakened too, they quickly fail. This starts a rapid chain reaction of snapping bands, a crumbling wall and falling rubble, all of which sounds like an explosion."

For more information on silo straightening, contact: FARM SHOW Followup, Bernard Stanek, Chromalloy Farm Systems, Box 8068, Madison, Wis. 53708 (ph 608 271-2220).

The results three days later of the straightening job provided by four experts from Madison Silo Co. Another company built the silo.

New Life For Animals With Broken Legs

Up until a few years ago, a horse or cow with a broken leg almost always had to be destroyed. Now, thanks to a new bone repairing technique, they can be saved.

The procedure was developed in Switzerland about 10 years ago and is similar to techniques used on humans. It has been refined for application to horses by a veterinary team at Colorado State University which has used the system successfully for the past five years.

The surgical team ties the broken bone together with stainless steel plates which hold it in place until it heals. Similar techniques are used on dogs and cats, as well as on humans.

The Colorado State University team has used this procedure for broken bones in 28 horses over the past several years. Of that number, 13 have returned to "full athletic function without lameness."

"This is 45% success," says Dr. Simon Turner, a member of the surgical team. "Successful repair of a fracture depends on the horse's weight, size, age, temperament, and the kind of fracture.

"A horse's personality may make recovery difficult or impossible," he points out. "Nervous, high-strung horses usually make poor patients that will not accept casts and confinement. They often re-injure their legs from thrashing about and must ultimately be destroyed."

As for the factor of age, Dr. Turner says he can expect as high as 60% success in repairing fractures in very young animals. A young horse heals faster, and the metal implants will be strong enough to hold the bone together in a foal that weighs 125-300 lbs.

Dr. Turner says there is no definite time for removing the metal plates. In young animals, he usually removes them at 6-8 weeks, and in 8-13 weeks for older animals.

How widespread is this veterinary procedure? Dr. Turner says there are 23 veterinary colleges throughout the U.S. that have the equipment and expertise to do it.

"Cost of the surgery at Colorado State has ranged from $300 to $3,000. This cost is relatively inexpensive if it saves a valuable breeding animal that may be worth $50,000 or more."

Recovery time, even in a successful surgery, is long and tedious. Some horses are "pasture sound" at 10-12 months.

Dr. Turner suggests that owners of animals with a bone fracture consult with their veterinarian for advice about surgery before having the animal destroyed.

More information is available from Colorado State University, College of Veterinary Medicine, Fort Collins, Colo. 80523 (ph 303 491-7101).